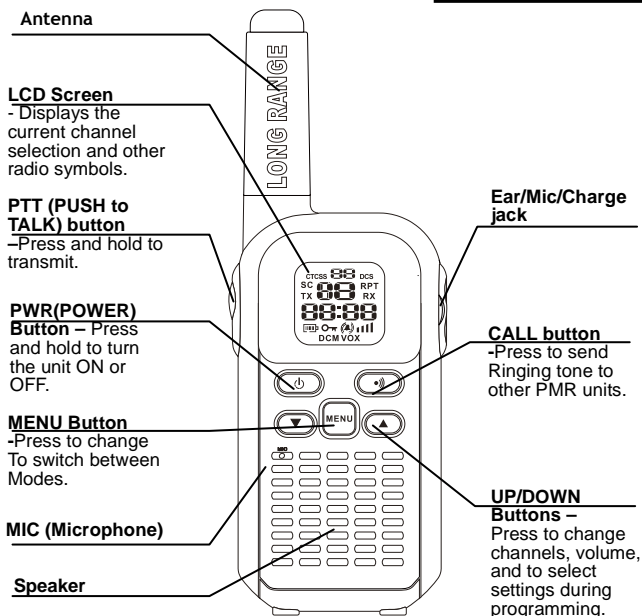
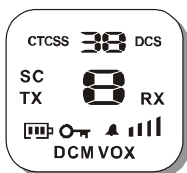


USER GUIDE



1. LCD Screen



8 Channel Number. Changes from 1 to 8 as selected by the user.

38 CTCSS Code. Changes from 1 to 38 as selected by the user.

Displays the Battery change level. When the bars are reduced, the battery needs recharging.

TX Displayed when transmitting a signal.

RX Displayed when receiving a signal.

DCM Displayed when the Dual Watch function is turned ON.

DCS Displayed when the Digital Code System is turned On.

VOX Displayed when the VOX feature is enabled.

SC Displays when the PMR is scanning all channels.

Displayed when the Key Lock feature is activated.

Displays the current Speaker volume level.

Displays when the call signal is ON.

2. Installation

2.1 Removing the Belt Clip

- Pull the Belt Clip latch forward (away from the Terrain 650)
- While pulling the Belt Clip latch, push up the Belt Clip as shown in Figure 1.

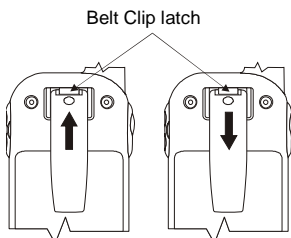


Figure 1

Figure 2

2.2 Installing the Belt Clip

- Slide the Belt Clip into the slot as shown in Figure 2. A "click" indicates the Belt Clip is locked into position.

2.3 Installing the Battery pack

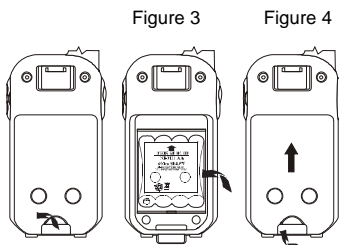


Figure 3

Figure 4

Caution: Observe the proper battery polarity orientation when installing batteries. Incorrect positioning can damage both the batteries and the unit.

- Slide down the Battery Compartment Cover.
- Install the rechargeable battery pack by following the orientation as shown in Figure 3 (the arrow is showing and pointing upward.)
- Replace the Battery Compartment Cover. See Figure 4.

Important

Read these Safety Warnings before you charge the batteries.

When placing the Terrain 650 in the charger, use only the power supplies listed in the user instructions supplied with the Terrain 650 .

Don't try to recharge non-rechargeable batteries.

Make sure the battery compartment cover is securely locked in place when you are charging the batteries.

Dispose of used batteries safely and in a way that will not harm the environment- never try to burn them or put them anywhere, they could get burnt or punctured.

Don't leave dead batteries in your Terrain 650 units.

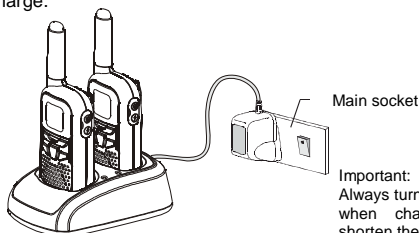
They might leak if you do.

2.4 Charging the battery pack

- Insert the small plug on the end of the mains adaptor into the Power-in Connection Jack at the back of the desktop charger.
- Plug the mains adaptor into a 240V AC, 50Hz main socket with the switch on the socket set to OFF.
- Switch ON the main socket.

The Terrain 650 must be charged using the mains adaptor provided. Using any other adaptor will result in non-compliance with EN60950-1 and will invalidate any approvals & warranty.

- d. Place the Terrain 650 units in the charge cradle in an upright position and facing outward. The charge LED indicators will light up.
- e. It takes about 10 hours to fully recharge the batteries if they are completely run down. New batteries takes up to 14 hours to fully charge.



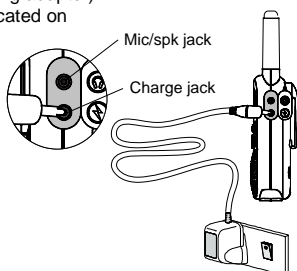
Important:
Always turn off the PMR units when charging. This will shorten the charging time.

f. Charging the battery pack (using adaptor)

Lift up the charge socket cover located on the right side of the handset.

Insert the round connector of the 9.0V DC/200mA adaptor into the charge jack.

Plug the mains adaptor into a 240V AC, 50Hz main socket with the switch on the socket set to OFF. Use only power supplies listed in the user instruction. Csec AC Adaptor brand ; Model -CSD0900200G power supply
Then switch ON the main socket.



Battery meter

The battery meter is located in the left corner of the LCD Screen. It appears like a battery with three bars inside. These indicate the amount of power available. When the battery level reaches its minimum level in PMR on mode, unit will emit two beep tones and automatically the unit will power off.



The Terrain 650 can detect the battery charge in 4 levels;

Battery charge at high level.

Battery charge at medium level.

Battery charge at low level. At this level, the Terrain 650 will emit a "beep" sound for every 10 seconds in normal mode.

Battery charge at very low level. When the battery level reaches its minimum level while unit is on mode, unit will emit two beep tones and automatically turn off the unit.

Important: Charge the unit for 10-14 hours.

CAUTION : Risk of explosion if battery is replaced by an incorrect type. Disposed of used batteries according to the instructions.

Battery life

The Terrain 650 has a built in power saver to make the batteries last longer. But when you are not using the units, turn them OFF to conserve battery power.

3. Operation

3.1 Transmitting range

The talk range depends on the environmental and terrain. It will be reach (up to about **8km**) in wide open space, without obstructions such as hills or buildings. Don't try to use two PMR units which are less than 1.5m (5feet) apart. If you do, you may experience interference.

Important safety warning

To reduce radio frequency exposure when you are using your Terrain 650, hold the unit at least 5cm (2 inches) away from your face. Never use your Terrain 650 outdoors during a thunderstorm.

Don't use the Terrain 650 in the rain.

If your Terrain 650 gets wet, turn it off and remove the battery. Dry the battery compartment and leave the cover off for a few hours. Don't use the unit until it is completely dry.

Keep the Terrain 650 out of reach babies and young children.

3.2 Turning the Unit ON/OFF



To Turn ON;

- Press and hold the **POWER** button until the LCD Screen turns ON and displays the current channel.

To switch OFF;

- Press and hold the **POWER** button until the LCD screen turns blank.

You can hear a musical tone each time to confirm.

3.3 Adjusting the Speaker volume

The volume level is shown by vertical bars on the LCD screen. You can change the volume while using your Terrain 650, or while the unit is idle (switched on but not in use).

Press **UP** button to increase, or press **DOWN** button to decrease the speaker volume.

3.4 Changing Channels

The Terrain 650 has 8 available channels, to communicate with other Terrain 650 users within a range, you must all have your Terrain 650 tuned in to the same channel.



- Press the **MENU** button **once**, the current channel number flashes on the LCD Screen.
- Press the **UP** or **DOWN** button to select the desired channel. The channel changes from 1 to 8, or vice versa.
- Press the **PTT** button to confirm the channel setting.

Note: Refer to the "Channel Table" section of this Owner's Manual for detailed frequency listing.

3.4.1 Setting the CTCSS sub-channel

Each channel also has 38 sub-channels to let you set up group of users within the same channel for more private communication. If you have set the sub-channel, you can only communicate with other PMR users tuned to the same channel and sub-channel.

To turn the sub-channel function off, simply set the sub-channel to 0 (zero). You can communicate with any Terrain 650 user set to the same channel who also turns off the sub-channel operation (or whose Terrain 650 unit does not have the feature).



- Press the **MENU** button **twice**, the current CTCSS sub-channel number flashes on the LCD Screen.
- Press the **UP** or **DOWN** button to select one of the 38 CTCSS sub-channels.
- Press the **PTT** button to confirm the sub-channel setting.

3.4.2 SETTING THE DCS ADVANCED DIGITAL CODE.

Each channel also has 83 digital codes to let you set up group of users for more secured private communication.



- Press the **MENU** button **3 times**. DCS code is blinking on the LCD screen.
- Press **UP** or **DOWN** button to select the desired DCS code.
- Press the **PTT** button to confirm the DCS channel setting.

Transmitting and Receiving

- ! **The Terrain 650 transmission is "one way-at-a-time."** While you are speaking, you can not receive a transmission.
- ! **The Terrain 650 is an open-license band.** Always identify yourself when transmitting on the same channel.

3.4.3 Transmitting (sending a speech)

The unit is continuously in the Receive mode when the unit is turned ON and not transmitting. When a signal is received on the current channel, "**RX**" icon will be displayed on the LCD Screen and the receiver LED lights up.

3.4.4 Transmitting (sending a speech)



- Press and hold the **PTT** (push to talk) button to transmit your voice. "**TX**" icon will be displayed on the LCD Screen.
- Hold the unit in a vertical position with the MIC (Microphone) 5 cm away from the mouth. While holding the **PTT** button, speak into the **MIC** (microphone) in a normal tone of voice.
- Release the **PTT** button when you have finished transmitting.

3.4.5 Monitor

You can use the Monitor feature to check for weak signals on the current channel.



- Press and hold the **MENU** and **DOWN** buttons at the same time. "**RX**" icon will be displayed on the LCD Screen. Your Terrain 650 will pick up signals on the current channel, including background noise.
- Press the **MENU** button to stop the channel monitoring.

3.5 Setting the VOX (Voice Activated) Sensitivity

In VOX mode, the Terrain 650 will transmit a signal only when it is activated by your voice or other sounds around you. The unit will transmit further for 2 seconds even if you stop talking.

The level of VOX sensitivity is shown by a number on the LCD Screen. At the highest level, the units will pickup softer noise (including background noise); at the lowest level, it will pick up only quite loud noise.



- Press the **MENU** button **4 times**, "**VOX**" icon will be displayed and "**OF**" flashes on the LCD Screen.
- Press **UP** button to set the VOX sensitivity into maximum level (the maximum level is "3"). To deactivate the VOX function, press the **DOWN** button until "OF" appears on the LCD Screen.
- Press the **PTT** button to confirm your setting. "**VOX**" will steadily appear on the LCD Screen as long as the VOX feature is activated.

VOX operation is not recommended if the Terrain 650 will be used in a noisy or windy environment.

3.6 Activating the auto Channel Scan

Channel scan perform searches for active signals in an endless loop for all 8 channels, 38 CTCSS codes and all 83 DCS codes.



- Press the **MENU** button **5 times**, "**SC**" icon will display on LCD Screen.
- Press **UP** or **DOWN** button to begin scanning channels when an active signal is detected, channel scan pauses on the active channel.
- Press the **MENU** button **six times**, CTCSS flashes on the LCD screen press **UP** or **DOWN** button to begin scanning the CTCSS from 1-38.
- Press the **MENU** button **seven times**, DCS flashes on the LCD screen. Press **UP** or **DOWN** button to begin scanning DCS code 1-83.
- Press the **PTT** button to confirm your setting.

3.7 Call alert

Your Terrain 650 can alert you to incoming signal by emitting an audible call tone signal.

3.7.1 Call-Ring tone



You can send a Call-ring tone to other PMR users to give an alert that you wanted to communicate with them.

Press the Call button

You will hear a ring tone for about two seconds; "**TX**" icon appears on the LCD Screen. Any other units within the transmitting range and tuned in to the same channel and sub-channel (if applicable) will hear the Call-ring tone.

3.7.2 Selecting a Call- Ring tone

The Terrain 650 is equipped with 5 different types of Call-Ring tones.



- Press the **MENU** button **eight times**, the "CA" icon will display and "01" is blinking on the LCD Screen.
- Press **UP** or **DOWN** button to select the desired Call-ring tone. A respective Call-ring tone sound will be played when changing from one tone to another.
- Press the **PTT** button to confirm your setting.

3.8 Setting the Roger Beep

The Roger Beep is a tone which is automatically transmitted whenever the PTT button is released. This alerts the receiving party to inform that you have intentionally ended the transmission, and you are now in receive mode.



- Press the **MENU** button **9 times**, the "ON" icon is blinking on the LCD Screen.
- Press the **UP** or **DOWN** button to select the Roger beep On/Off.
- Press the **PTT** button to confirm your setting.

3.9 Setting the Key Tone ON or OFF

This feature allows the Terrain 650 to emit a confirmation tone after pressing each button.



- Press the **MENU** button **10 times**, the "ON" icon is blinking on the LCD Screen.
- Press the **UP** or **DOWN** button to select the Key tone On/Off.
- Press the **PTT** button to confirm your setting.

4. Setting the Dual Watch Mode

Your Terrain 650 is capable of monitoring two channels, the current and another (dual watch) channel. If the unit detects a signal on either channel, it will stop and receive the signal.



- Press the **MENU** button **11 times**, "DCM" icon will be displayed while "OF" flashes on the LCD Screen.
- Press the **UP** or **DOWN** button to select the Dual Watch channel (1-8, except the current channel).
- Press the **MENU** button to change the CTCSS code.
- Press the **UP** or **DOWN** button to select the desired CTCSS code (1-38)
- Press the **MENU** button to change the DCS code.
- Press the **PTT** button to confirm your setting.

5. Auxiliary Features

5.1 Key Lock



The Key Lock feature allows user to disable the **UP**, **DOWN** and **MENU** buttons so that the Terrain 650 settings could not be changed accidentally.

- To activate the Key Lock feature, press and hold the **MENU** button until key lock "🔒" icon appears on the LCD Screen.
- To deactivate the key Lock feature, press and hold the **MENU** button until key lock "🔒" icon disappears on the LCD Screen.

Note: The **PTT**, and **POWER** buttons will remain functional even if the Key Lock feature is activated.

5.2 LCD Screen Back Light



Every time a button is pressed (except PTT and CALL button), the LCD Screen back light will illuminate for 4 seconds.

5.3 Microphone/Earphone/Charge Jack



The Terrain 650 is equipped with an auxiliary microphone, earphone, and charge jack located at the opposite side of the PTT button.

3.8 Setting the Roger Beep

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- Press the **MENU** button to change the CTCSS code.
- Press the **UP** or **DOWN** button to select the desired CTCSS code (1-38)
- Press the **MENU** button to change the DCS code.
- Press the **PTT** button to confirm your setting.

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- To activate the Key Lock feature, press and hold the **MENU** button until key lock “” icon appears on the LCD Screen.
- To deactivate the key Lock feature, press and hold the **MENU** button until key lock “” icon disappears on the LCD Screen.

Note: The **PTT**, and **POWER** buttons will remain functional even if the Key Lock feature is activated.

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Every time a button is pressed (except PTT and CALL button), the LCD Screen back light will illuminate for 4 seconds.

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The Terrain 650 is equipped with an auxiliary microphone, earphone, and charge jack located at the opposite side of the PTT button.

Binatone Help Line - 0845 345 9677

6. Specifications

Channels Available	8 Channels
CTCSS Sub-channel	38 for each Channel
Digital Code	83 for each Channel
Output Power (TX)	0.5 W
Range	Up to 10 Kms.

Channel Frequency Table

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	446.00625	5	446.05625
2	446.01875	6	446.06875
3	446.03125	7	446.08125
4	446.04375	8	446.09375

7. Safety

CAUTION

Damaged Antenna

Do not use any Terrain 650 that has a damaged antenna. If a damaged antenna comes in contact with the skin, a minor burn may result.

Batteries

All batteries can cause property damage and/or bodily injury such as burns if conductive material such as jewelry, keys, or beaded chains touches exposed terminals. The material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

WARNING

For Vehicles with an Air Bag

Do not place your Terrain 650 in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a Terrain 650 is placed in the air bag deployment area and the air bag inflates, the Terrain 650 may be propelled with great force and cause serious injury to the occupants of the vehicle.

Potentially Explosive Atmospheres

Turn your Terrain 650 OFF when in any area with a potentially explosive atmosphere, unless it is a type especially qualified for such use (for example, Factory Mutual Approved). Sparks in such areas could cause an explosion or fire resulting in injury or even death.

Batteries

Do not replace or charge batteries in a potentially explosive atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion.

Blasting Caps and Areas

To avoid possible interference with blasting operations, turn your Terrain 650 OFF near electrical blasting caps or in a "blasting area" or in areas posted: "Turn off the two way radio." Obey all signs and instructions.

NOTE: Areas with potentially explosive atmospheres are often, but not always clearly marked. They include fueling areas such as below deck on boats; fuel or chemical transfer or storage facilities; areas where the air contains chemicals or particles, such as grain, dust, or metal powders; and any other area where you would normally be advised to turn off your vehicle engine.

8. Cleaning and Care

To clean your Terrain 650, use a soft cloth dampened with water. Do not use cleaners or solvent, which may cause damage that may not be covered by guarantee.

Binatone Help Line - 0845 345 9677

9. Guarantee

The Binatone Terrain 650 is fully guaranteed for 12 months from the date of purchase shown on your sales receipt. The guarantee does not cover damage by misuse or negligence, or by excessive voltage.

Please keep your sales (till) receipt - this is your guarantee. You should also keep the original packaging materials.

When unpacking your Binatone Terrain650, check for visible damage. If you see any damage, do not use the PMR - return the whole unit to where you bought it.

If your Binatone Terrain650 develops a fault, refer to the "Troubleshooting Guide." section of this manual. If you can't solve the problem, return the whole unit as follows;

While the unit is under guarantee

1. Pack up all the parts of your Terrain650, using the original packaging. Remember to include the main adaptor.
2. Return the unit to the store where you bought it, and make sure you take your sales receipt as your proof of purchase.
3. In the unlikely event that you need to return your Terrain 550 to our Repair Centre while it is under Guarantee, please include the sales receipt. There will be an £5 handling charge for repair of unit under Guarantee.

Repair after the Guarantee has expired

If the unit is no longer covered by Guarantee, first follow steps 1 as for repair under Guarantee, Then...

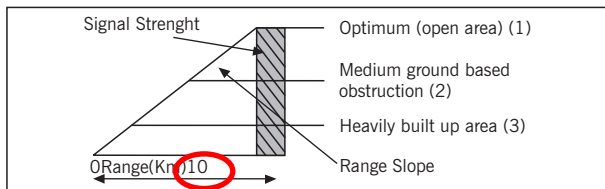
2. Call our service Department on **0845 345 9677** and ask for a quotation of the repair charge, and details of where to send your Terrain 550 for repair.
3. Return your Terrain650 to the address given by the Service Department, making sure to include your name and address, and a cheque or postal order for the value of the repair charge.

This does not affect your statutory rights.

Binatone Telecom plc operates a policy of continuous product improvement, and so reserves the right to make changes to the product and functions without prior notice.

Effective Range

The Transmission range of the product is dependent on the environment terrain where it is being used, the following diagram attempts to guide the user on the sort of performance to expect for everyday use.



Range Check

The Transmission range will be affected as shown in the above diagram. The transmitting range typical values for different environment conditions will be 10 km (1) 4 km (2) 2 km (3). It should be remembered that these are only guide values as actual achieved distances will be dependent on the environment and terrain.

10. Troubleshooting Guide

Symptom	Solution
No power.	<ul style="list-style-type: none"> • Check if the batteries are installed properly. • The battery may be weak. • Replace the old batteries with new one.
Reception is weak.	<ul style="list-style-type: none"> • Press the UP button to increase the receiver volume level. • The receiving signal may be weak and/or out of range. • If this happens, press the MENU and DOWN buttons at the same time to activate the Monitor function.
Cannot change CTCSS sub-channels.	<ul style="list-style-type: none"> • Key lock mode must be deactivated if the Key lock icon (🔒) is displayed on the LCD Screen. • To change CTCSS sub-channels, press the MENU button twice, the CTCSS sub-channel number flashes on the LCD Screen. Press the UP or DOWN button to change the CTCSS sub-channel. • Batteries may be weak.
Range is limited.	<ul style="list-style-type: none"> • Batteries may be weak. • Replace with new batteries if the charge level indicator gets low. • See the "Effective Range" diagram. The maximum range will vary depending on terrain and environment. • Open fields provide the maximum range, while steel/concrete structures, heavy foliage, and use in buildings and in vehicles may limit the range significantly. • Wearing the radio close to the body, such as in a pocket or on a belt, will decrease range; change the location of the radio.
Sound distortion problems.	<ul style="list-style-type: none"> • If you are transmitting, speak in a normal tone of voice, 5 cm away from the MIC (microphone.). • If you are receiving, lower the volume to a comfortable level. • Radios too close. Radios must be at least 2 meters apart; increase your distance. • Radios too far apart. Obstacles interfere with transmission. Talk range is up to 10 kms. in a clear unobstructed conditions.
No communication	<ul style="list-style-type: none"> • Check the Channel and the CTCSS code setting. Both the Transmitting and Receiving PMR units should have tuned to the same Channel and CTCSS code (if applicable).

This equipment is intended for use in:

Austria	✓	Finland	✓	Latvia	✓	Spain	✓
Belgium	✓	France	✓	Liechtenstein	✓	Sweden	✓
Bulgaria	✓	Germany	✓	Luxemburg	✓	Switzerland	✓
Croatia	✓	Greece	✓	The Netherlands	✓	Turkey	✓
Cyprus	✓	Hungary	✓	Norway	✓	UK	✓
Czech	✓	Iceland	✓	Poland	✓	Romania	✓
Denmark	✓	Ireland	✓	Portugal	✓	Slovakia	✓
Estonia	✓	Italy	✓	Slovenia	✓		

✓ Countries of use

Declaration of Conformity

The **Binatone Terrain 650** complies with the essential requirements

- **R&TTE Directive, 1999/5/EC**
- **Low Voltage Directive 73/23/EEC**

And conforms to the following relevant standards:

- **ETSI EN 300 296-2 V1.1.1**
- **ETSI EN 301 489-5 V1.3.1**
- **ETSI EN 301 489-1 V1.6.1**
- **EN60065-1:2001**



Waste electrical products must not be disposed of with household waste. This equipment should be taken to your local recycling centre for safe treatment.

Binatone Telecom plc operates a policy of continuous product improvement, and so reserves the right to make changes to the product and functions without prior notice.

